

University of Nebraska - Lincoln

**DigitalCommons@University of Nebraska - Lincoln**

---

Transactions of the Nebraska Academy of Sciences  
and Affiliated Societies

Nebraska Academy of Sciences

---

1982

# Transactions Of The Nebraska Academy Of Sciences And Affiliated Societies Volume X July 1982 Front Matter

Follow this and additional works at: <http://digitalcommons.unl.edu/tnas>

---

"Transactions Of The Nebraska Academy Of Sciences And Affiliated Societies Volume X July 1982 Front Matter" (1982). *Transactions of the Nebraska Academy of Sciences and Affiliated Societies*. 503.  
<http://digitalcommons.unl.edu/tnas/503>

This Article is brought to you for free and open access by the Nebraska Academy of Sciences at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Transactions of the Nebraska Academy of Sciences and Affiliated Societies by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

**STATE BOARD OF EDUCATION  
AND  
STATE BOARD OF VOCATIONAL EDUCATION**

Walter M. Thompson, president	Oakland	District 3
Margaret Lockwood, vice-president	Gering	District 6
Cynthia H. Milligan	Lincoln	District 1
James Monahan	Omaha	District 2
Helen Greene	Ashland	District 4
William Marshall III	Grand Island	District 5
Arlene E. Hart	Sargent	District 7
William C. Ramsey	Omaha	District 8

**DEPARTMENT OF EDUCATION**

Anne Campbell, Commissioner of Education  
Gregg Otte, Supervisor of Information & Publications  
301 Centennial Mall South Lincoln, Nebraska 68509

**ESTABLISHMENT OF THE TRANSACTIONS  
OF THE  
NEBRASKA ACADEMY OF SCIENCES**

In 1969, during its eightieth session, the State Legislature of Nebraska passed Legislative Bill 776, which appropriated funds to aid the Nebraska Academy of Sciences in the publication of scientific works submitted by Nebraska scientists. Volumes I and II of the *Transactions* were published under this arrangement, but Volume III was privately financed. Volume IV and succeeding volumes are being published under the auspices of the Nebraska Department of Education with funds authorized by the State Legislature, supported by the Governor.

**Printed by  
THE NEBRASKA DEPARTMENT OF EDUCATION  
Lincoln, Nebraska**

**1982**

This cover design represents the merging of the disciplines of the biological and social sciences with those of the earth and physical sciences.

**TRANSACTIONS**  
**of the**  
**NEBRASKA ACADEMY OF SCIENCES**  
**and Affiliated Societies**

**Volume X**

**July 1982**

**AFFILIATED SOCIETIES**

American Association of Physics Teachers, Nebraska Section, AAPT  
Greater Nebraska Association of Teachers of Science, GNATS  
Nebraska Chapter National Council for Geographic Education  
Nebraska Geological Society  
Nebraska Ornithologists' Union  
Nebraska Psychological Association  
Nebraska Section Mathematical Association of America  
Institute for Tertiary and Quaternary Studies, TER-QUA  
Lincoln Gem and Mineral Club, Inc.

The Nebraska Academy of Sciences was founded 30 January 1880  
and is affiliated with the American Association for the Advancement  
of Science and the National Association of Academies of Science.

ALL PERSONS interested in science, including the changing environments  
in the Great Plains, are welcome to become members in the Nebraska Academy of Sciences.

# NEBRASKA ACADEMY OF SCIENCES, INC.

## 306 Morrill Hall, 14th and U Streets Lincoln, Nebraska 68588-0339

### OFFICERS

President: 1981-82	Carl Throckmorton, Hastings College
President: 1982-83	Thomas B. Bragg, University of Nebraska at Omaha
President Elect: 1982-83	Ronald R. Weedon, Chadron State College
Executive Director: 1982-85	C. Bertrand Schultz, University of Nebraska-Lincoln
Treasurer: 1981-83	Robert B. Johnston, University of Nebraska-Lincoln
Corresponding Secretary: 1981-83	T. Mylan Stout, University of Nebraska-Lincoln
Recording Secretary: 1982-84	Karen Messenger, University of Nebraska-Lincoln
Councillors: 1979-82	Claire M. Oswald, College of Saint Mary
1980-83	Robert C. Sutherland, Wayne State College
1981-84	Rosalind Morris, University of Nebraska-Lincoln
1982-85	Carl Throckmorton, Hastings College
Collegiate Academy:	Marvin Bichel, Nebraska Wesleyan University
	Walter R. French, Jr., Nebraska Wesleyan University
Junior Academy:	Donald Woodburn, Nebraska Department of Education
Science Teaching:	Patrick Geary, ESU No. 3, Omaha
	Charles Lang, Westside High, Omaha
AAAS and NAAS Representative:	Claire M. Oswald, College of Saint Mary
Long-Range Planning:	Walter Mientka, University of Nebraska-Lincoln
	Claire M. Oswald, College of Saint Mary
	Theodore J. Urban, Creighton University
Program Chairman:	Albert W. Zechmann, University of Nebraska-Lincoln

### POLICY COMMITTEE 1981-1982

Bellevue College, Bellevue	David M. Thorndike
Central Technical Community College, Hastings	Everett Hinton and Larry Keller
Chadron State College, Chadron	Ronald Weedon
College of Saint Mary, Omaha	Claire Oswald
Concordia College, Seward	Gilbert Daenzer
Creighton University, Omaha	Theodore J. Urban
Dana College, Blair	Larrie E. Stone
Doane College, Crete	Delbert King
Hastings College, Hastings	Clyde C. Sachtleben
Kearney State College, Kearney	Carl Sterner
McCook Community College, McCook	Elmer Kuntz
Metropolitan Technical Community College, Omaha	Don Krezenski
Midland Lutheran College, Fremont	Steven J. Rothenberger
Mid-Plains Community College, North Platte	Boyd Gentry
Nebraska Wesleyan University, Lincoln	Daniel B. Howell
Nebraska Western College, Scottsbluff	Gary Lund
Northeast Technical Community College, Norfolk	James Manning
Peru State College, Peru	David Pippert
Platte Technical Community College, Columbus	William Erwin
Southeast Community College, Fairbury	Frank Phelps
Southeast Community College, Lincoln	Robert E. Resz
Union College, Lincoln	Gilbert McMillen
University of Nebraska-Lincoln	Walter E. Mientka
University of Nebraska at Omaha	Thomas B. Bragg
University of Nebraska Medical Center, Omaha	Edward Holyoke
Wayne State College	Harland Pankratz
York College, York	Harold Tandy

# TRANSACTIONS of the NEBRASKA ACADEMY OF SCIENCES

Volume X

July 1982

## CONTENTS

	Page
Nebraska Academy of Sciences, Officers, Policy Committee . . . . .	ii
Editorial Board, Instructions to Contributors . . . . .	v
Membership Objectives and Friends of the Academy . . . . .	vi
A preliminary history of the Nebraska Academy of Sciences, 1880-1982 <b>C. B. Schultz</b> . . . . .	1

## BIOLOGICAL AND MEDICAL SCIENCES

Changes in moisture content of little bluestem ( <i>Andropogon scoparius</i> ) standing dead following rainfall <b>T. B. Bragg</b> . . . . .	5
Loss of trees in Nemaha County, Nebraska, since 1856 due to agricultural expansion <b>L. G. Pappas, K. Toews, and R. Fischer</b> . . . . .	7
Food habits of the red fox in Nebraska <b>D. G. Powell and R. M. Case</b> . . . . .	13
A bryological survey of north-central Nebraska <b>L. L. Spessard</b> . . . . .	17
Contributions to the bryology of Nebraska <b>L. L. Spessard and M. C. Williams</b> . . . . .	21

## EARTH SCIENCES

Two-ice-lobe model for Kansan glaciation <b>J. S. Aber</b> . . . . .	25
New herpetological species and records from the Norden Bridge Fauna (Miocene: Late Barstovian) of Nebraska <b>J. A. Holman</b> . . . . .	31
A fossil snake ( <i>Elaphe vulpina</i> ) from a Pliocene ash bed in Nebraska <b>J. A. Holman</b> . . . . .	37

# NEBRASKA ACADEMY OF SCIENCES, INC.

The membership of the Academy consists of those individuals and institutions interested in science, and those persons actively working and contributing to science in the state of Nebraska. It includes nonprofessional persons, as well as representatives from education, the professions, industry, and governmental agencies.

The Academy was organized in 1880 in Omaha with 75 charter members, and reorganized in 1891 in Lincoln.

The Academy was incorporated in 1950 as a nonprofit educational institution, and it is neither a state agency, nor is it sponsored by any particular university, college, or other Nebraska educational organization. In 1963 the Internal Revenue Service established the Academy's rating as "Section 501(c)(3)" of the Internal Revenue Code. The Policy Committee of the Academy is made up of one representative from each of the colleges and universities of the state.

## OBJECTIVES

The objectives of the organization are to further the work of scientists and science teachers in the high schools and colleges of the state, to facilitate cooperation among them, to improve the effectiveness of science in the promotion of human welfare, and to increase public understanding and appreciation of the importance and promise of science in human progress.

## RESOLUTION

The following resolution concerning our environment was recently approved by the Academy membership:

Be it resolved that the Nebraska Academy of Sciences, as the principal organization representing the scientists of the state, is greatly concerned with the deterioration of the environment. The scientific talent of Nebraska is considerable, and it is hoped that individually and collectively it may be better utilized by both state and federal agencies in addressing problems of destruction of trees, native prairie, groundwater resources, and habitats.

## "FRIEND OF SCIENCE" AWARDS

These awards are given to persons who are not actively engaged in scientific teaching or research, but who have shown unusual interest in promoting science and in sponsoring scientific programs in Nebraska. The following Nebraskans have received a Friend of Science Award: Mrs. Mabel L. Criss, Omaha (1970); Dr. Walter D. Behlen, Columbus (1976); Dr. Vance D. Rogers, Lincoln (1977); George and Olivia Lincoln, Lincoln (1980); and Mr. and Mrs. Thomas C. Woods, Jr., Lincoln (1981).

## FRIENDS OF THE ACADEMY

The following organizations and individuals have shown interest in the program of the Nebraska Academy of Sciences, and have generously provided funds (including donations for scholarships, memorials, and research) during the past six years in order to help expand the work of the Academy in promoting research and good basic teaching of science and technology in the science departments of the high schools, community colleges, colleges, and universities of the state:

Mr. and Mrs. R. D. Amen, Lincoln  
Roger Anderson, Lincoln  
Emery L. Blue, Lincoln  
Commonwealth Electric Co., Lincoln  
Cooper Foundation, Lincoln  
Frank Crabill, Riverside, Connecticut  
Dobson Brothers Construction, Lincoln  
Dorsey Laboratories, Wander Foundation, Lincoln  
Mrs. Loren Eiseley, Wynnewood, Pennsylvania  
James Ferris, Lincoln Mfg. Co., Lincoln  
First National Bank, Lincoln  
Garvey Family Foundation, Wichita, Kansas  
Mrs. Mica Kubicek, Guaynabo, Puerto Rico  
Miss Mica Ann Kubicek, Guaynabo, Puerto Rico  
Dr. Lewis E. Harris, Harris Laboratories Inc., Lincoln  
The InterNorth Foundation, Omaha  
Jewish Welfare Federation, Lincoln

David B. Jones, Worthington, Minnesota  
Mr. and Mrs. Oliver Joy, Lincoln  
Peter Kiewit Company Foundation, Omaha  
Mr. and Mrs. George Lincoln, Lincoln Family Foundation, Lincoln  
Earl Luff, Lincoln Steel Division, Lincoln  
National Bank of Commerce, Lincoln  
Norden Laboratories, Lincoln  
Northwestern Bell, Omaha  
Mrs. Merrill Reller, Lincoln  
Don C. Ross, Wichita, Kansas  
C. Bertrand Schultz, Lincoln  
Marian R. Schultz, Lincoln  
Security Mutual Life Insurance Co., Lincoln  
Mr. and Mrs. T. Mylan Stout, Lincoln  
Mr. and Mrs. Lynn Robert Wolfe, Boulder, Colorado  
Woodman Accident and Life Co., Lincoln  
Mr. and Mrs. Thomas C. Woods, Jr., Lincoln

## PREPARATION OF MANUSCRIPTS FOR PUBLICATION IN THE *TRANSACTIONS*

Three copies (an original and two photocopies) of the manuscript and figures, in finished form, should be sent to the Academy office with the understanding that it is to be published exclusively in the *Transactions*, unless otherwise arranged in advance. Authors must keep a copy (4th copy) of their manuscripts for reference.

Manuscripts should be typewritten and double-spaced **throughout**, including the References section and tables. Title, author, address with ZIP code, and shortened running title should appear on a separate page. Measurements should be reported in metric units. Headings used within the main text should be consistent: centered and all caps for primary headings, left margin/bold print for secondary headings, and left margin/bold italics with text run in for third-level headings.

An abstract, not to exceed 200 words, of the significant contribution of the research must accompany each manuscript. The abstract may not contain literature references, footnotes, tables, or illustrations.

In preparing the References section, authors should follow **exactly** the form of the appropriate example below. Note especially that, except for authors' initials, **no abbreviation** is used.

### Serial:

Jones, K. J., M. J. Ulmer, and J. M. Smith. 1965. Helminths from six species of Iowa bats. Proceedings of the Iowa Academy of Sciences, 77(2):200–206.

### Book:

Kennedy, C. R. 1975. Ecological animal parasitology. New York, John Wiley and Sons: 163p.

### Contained:

Davidson, D. 1968. Actions, reasons, and causes. In M. Care and L. Landesman (eds.), The theory of action. Bloomington, Indiana University Press: 188–190.

References for all published material cited in the text must appear in the References section **and vice versa**. Citation of unpublished work should be avoided. When unavoidable, such citations, except for masters' and doctoral theses, should be made fully in the text and not included in the References section. Authors and dates used only as authorities for scientific names do not appear in the References section.

Manuscripts longer than twenty (20) pages and those with an unusually large number of illustrations may require financial cooperation of the author.

Questions should be directed to Dr. C. B. Schultz, Executive Director and Managing Editor, Nebraska Academy of Sciences, 306 Morrill Hall, 14th and U Streets, Lincoln, Nebraska 68588 (telephone: 402/472-2662 or 472-2644).